USSR UDC 539.3

KOPERNIK, G. R., PETROV, V. V.

"On One Method for Solving Problems in the Theory of Flexible Hollow Shells"

V sb. Raschet. prostranstv. sistem stroit. mekh. (Calculation of Three-Dimensional Systems in Structural Mechanics -- Collection of Works), Saratov, Saratov University, 1972, pp 12-17 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 3V144)

Translation: A method is given for calculating flexible hollow shells that is based on the simultaneous application of the Bubnov-Vlasov and Bubnov methods. The Bubnov-Vlasov method is applied to find the force function and the Bubnov method is used to find the displacement function. The initial system of partial differential equations, as a result of applying the proposed technique, reduces to a system of ordinary differential equations and to a system of nonlinear algebraic equations for which methods of the solution are sufficiently well developed. A shell that is square in plan and loaded uniformly by a distributed pressure is used as an example. From an analysis of the solutions and a comparison of the results with the data of other authors, it was possible to conclude that a computational accuracy applicable for quantitative evaluations is achieved under a single-term approximation of the displacement-function. 5-ref. V. B. Silkin.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

USSR

PETROV, B. N., PETROV, V. V., ULANOV, G. M., AGEYEV, V. M., ZAPOROZHETS, A. V., USKOV, A. S., KOCHUBIEVSKIY, I. D.

"Origin of the Information Theory of Control"

Tr. IV Vses. Soveshch. po Avtomat. upr., 1968. Teoriya Avtomat. upr. [Works of Fourth All-Union Conference on Automatic Control, 1968. The Theory of Automatic Control], Moscow, Nauka Press, 1972, pp 145-154, Discussion 256-262 (Translated from Referativnyy Zhurnal, Kibernetika, No 3, Moscow, 1973, Abstract No 3 V277 by the authors).

Translation: This work studies the information characteristics of control processes of general form. The conclusion of information characteristics is based on thresholds of differentiability of states of an object of control at a given level of organization, introduced by the authors. The information conditions of basic modes of control and regulation are studied, including stabilization of the states of a control object, reproduction of required states and information conditions of invariance (absolute and with accuracy to \(\epsilon\)). General equations are produced for the balance of enthalpy, corresponding to the basic modes of control. A general analogy is discovered between problems in statistical physics and information processes in control. Examples are presented of the design of control systems by the methods suggested. 12 Biblio. Refs.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

USSR -

UDC 519.2

PETROV, V. V.

"Sums of Independent Random Variables"

Summy nezavisimykh sluchaynykh velichin (Sums of Independent Random Variables), Nauka Press, 1972, 416 pp, ill., lr. 65 k. (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V9K)

Translation: In this book a study was made of limit theorems for the sums of independent random variables. It is adjacent to the widely known monographs by B. V. Gnedenko and A. N. Kolmogorov entitled Predel'nyye rasperedeleniya dlya summ nezavisimykh sluchaynykh velichin (Limit Distributions for Sums of Independent Random Variables), Gostekhizdat Press, Moscow-Leningrad, 1949 and I. A. Ibragimov and Yu. V. Linnik entitled Nezavisimyve i statsionarno svyazannyye velichiny (Independent and Stationarily Related Variables), RZn-Matematika, 1966, 6V14K. Along with the classical results of summation theory it contains a discussion of many of the research works in recent years. A large part of the book contains material not discussed previously in monographs.

The book comprises 10 chapters. Chapter 1 is auxiliary. It contains information about the general nature of probability theory used in the following chapters.

Chapter 2 contains the theory of infinitely divisible distributions. In it some of the simplest properties and the canonical representation of

PETROV, V. V., Summy nezavisimykh sluchaynykh velichin, Nauka Press, 1972, 416 pp, ill., lr. 65 k.

infinitely divisible characteristic functions are established. One auxiliary Asseen lemma is presented.

Chapter 3 contains a number of inequalities for sums of independent random variables. From the beginning using the lemma from Chapter 2, the upper and lower estimates are proved for the concentration function of an infinitely divisible distribution in terms of spectral functions (Lekam). From this result, the necessary and sufficient conditions of continuity of the infinitely divisible distribution function are derived. Inequalities are then presented for the concentration function of the sum of the independent random variables: Kolmogorov-Rogozin inequality, generalizations of these inequalities found by Asseen and a number of results of the author. Chapter 3 also contains the proofs of the Levy, Kolmogorov and the Khayyek-Ren'ya inequalities for the maximum of successive sums. The exponential inequalities of S. N. Bernshteyn are presented for sums of random variables and generalizations of the Bernsteyn inequalities obtained by the author.

Chapter 4 contains a discussion of the classical theorems of summation theory in the scheme of sequences of series of independent random variables. This chapter contains a discussion of the A. Ya. Khinchine theorem regarding the class of limit laws for sums of independent random variables, the B. V. Gnedenko theorems on the conditions of convergence to a given infinitely 2/5

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PETROV, V. V., Surmay nezavisinykh sluchaynykh velichin, Nauka Press, 1972, 416 pp, ill., 1 r. 65 k.

divisible law, the Levy and Khinchine theorem of limit laws of class L and stable limit laws. In Chapter 4 the conditions of convergence to a normal law (the Lindeberg theorem, the Feller theorem, and so on) are derived from the general limit theorems.

In Chapter 5 a study was made of the rate of convergence of the distribution function $F_n(x)$ of a normalized sum of independent random variables to the normal distribution function $\Phi(x)$. The theorems of Asseen, A. S. Feinleib and the author on estimating the difference of the functions of limited variation the author of the difference of their Fourier-Stiltjes transformations are proved in terms of the difference of their Fourier-Stiltjes transformations are proved in it. The evaluations of Lyapunov, Asseen and Berry-Asseen are presented for in it. The evaluations of Lyapunov, Asseen and Berry-Asseen are presented for $R_n(x) = F_n(x) - \Phi(x)$ and the generalization of these estimates (the Kats results, those of the author, and so on) and also the estimate for $R_n(x)$ considersults, those of the author, and so on)

ing the dependence on x and n (Asseen, S. V. Nagayev, and so on). Chapter 6 is devoted to asymptotic expansions of the distribution function $\mathbf{F}_{\mathbf{n}}(\mathbf{x})$. The explicit formulas for an arbitrary term of the asymptotic expansion are presented in it, and the expressions are written out for the first four terms of the expansion. In Chapter 6 we have the results of the author regarding the asymptotic expansions of the function $\mathbf{F}_{\mathbf{n}}(\mathbf{x})$ and its derivatives pertaining to

PETROV, V. V., Summy nezavisimykh sluchaynykh velichin, Nauka Press, 1972, 416 pp, ill., 1 r. 65 k.

the case of sums of difference-distributed random variables. The results of the reviewer [L. Osipov] regarding the asymptotic expansions of $F_n(x)$ with evalua-

tions of the remainder which depend on x and n in the special case of identical

distributions are also presented.

Chapter 7 contains local limit theorems. A study was made of two classical versions of the local limit theorem for latticed distributions and for densities. The known Gnedenko theorems for the summation of identically distributed variables are presented. The results of the author generalizing the Gnedenko theorem to the case where among the distributions of terms there are only a finite number of different ones are discussed. The local theorems of Yu. V. Prokorov are discussed for the more general case of differently distributed terms. Estimates of the convergence rate and the asymptotic expansions in local theorems (the theorems of V. V. Gnedenko, Asseen and the author) are also presented.

Chapter 8 contains some results of the theory of large deviations. The theorem of the author generalizing the known Kramer theorem to the case of nonidentical distributions and the results of the reviewer regarding the conditions of normal convergence in step zones are discussed in it.

Chapter 9 is devoted to the laws of large numbers. At first the theorems

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і лісті. Вименення пользаване запанствина район і предпаній пользавання принанизавання принанизавани заменена веземенен

APPROVED FOR RELEASE: 09/17/2001

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PETROV, V. V., Summy nezavisimykh sluchaynykh velichin, Nauka Press, 1972, 416 pp, 111., 1 4. 65 k.

of B. V. Gnedenko regarding the weak law of large numbers is discussed in the general scheme of sequences of series of random variables. Then a study is made of the convergence of series of independent random variables. The proofs are presented for the A. N. Kolmogorov theorem of 3 series and the one theorem of Chzhun-Petrov. A study was also made of the law of large numbers in an expanded form; the theorems of Yu. V. Prokhorov, A. N. Kolmogorov, and Feller and the recent results of the author and Kheydya are discussed. Some results of the convergence rate in the laws of large numbers are presented.

In Chapter 10 a study is made of the law of the recurrent logarithm. It contains a discussion of the classical theorem of A. N. Kolmogorov regarding the repeated logarithm law and generalizations of the Kolmogorov theorem obtained by the author. The results of the author and V. A. Yegorov are presented on the relation between the repeated logarithm law and the central limit theorem. Rich material on the limit theorems is included in the appendices to the chapters of the book including formulations of many results adjacent to the basic text. The book includes bibliographic notes and broad bibliography (339 entries).

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PETROV, A. V., PETROV, V. Ya., SHKATOV, T. N.

"Determination of Probability of Losses of Information in a Buffer Memory Unit"

Moscow, Raboty po Tekhicheskoy Kib rnetike, No 4, 71, pp 24-29

Abstract: A method is suggested for determination of the probability of losses of information in buffer memory, allowing accurate estimation of losses in the system resulting from limited memory volume and limited waiting time. The formulas produced are rather simple and can be used for direct calculation if the probability characteristics of message arrival are known.

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UDC 681.326.35

DOROSHENKO, A. V., MANDRICH, V. G., PETROV, V. Ye., RIRAKHOVSKIY, Yu. V., BALASHOV, L. L.

"A Very-Low-Frequency Sinusoidal Voltage Generator"

USSR Author's Certificate No 315259, filed 15 Dec 69, published 9 Feb 72 (from RZh-Avtomatika, Telemekhanika i Vychislitel'naya Tekhnika, No 9, Sep 72, Abstract No 9A68 P)

Translation: This Author's Certificate introduces a very-low-frequency sinusoidal voltage generator equipped with a master oscillator, a digital-analog converter, and a DC output amplifier. To simplify the circuit of the generator and improve its operational reliability, the digital-analog converter contains a stepped voltage shaper and a shaper for the beginning and end of linear sections. These shaper circuits are interconnected by logic nets and a voltage divider and are connected to the DC output amplifier. Two illustrations.

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FIGURE 5.

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UDC 581.132.0351582.263

PETROV. V. YE, and LOSEVA, N. L., Kazan University imeni V. I. Ulyanov-Lenin

"Change in the Energy Balance of Chlorella pyrenoidosa Photosynthetic in Relation to Its Functional State and Light Conditions"

Moscow, Fiziologiya Rasteniy, No 1, 1971, pp 28-34

Abstract: Changes in the intracellular balance were studied in Chlorella pyrenoidosa grown in a thermostat-controlled chamber and exposed to about 10,000 lux from daylight lamps. When the functional activity of the plants decreased for one reason or another and the intensity of light was low, the excergic processes (e.g., respiration) tended to predominate over the endoergic (photosynthesis). This did not occurat higher light intensities.

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UDC 521.314.56

USSR

PETROV. WALLEY, KOMALTILOV, M.S., LYSENKO, S.N.

"Investigation With The Help Of An Analogue Machine Of Transients During Short-Circuit In The Circuit Of A Compensated Ferromagnetic Frequency Tripler"

Izv. Tomsk. politekhn. in-ta (Bulletin Of The Tomsk Polytechnical Institute), 1970, 211, pp 43-47 (from RZh-Elektronika i yeys primenemiye, No 2, February 1971, Abstract No 28561)

Translation: Danger of a short circuit in a ferromagnetic frequency tripler involves overvoltages of the capacitors and windings of the converters. Consequently, for computation of the insulating strength of the windings and choice of the magnitude of the working voltage of the capacitors, it is necessary to know the potential limiting currents for a short circuit of the tripler. For analysis of a short-circuit regime, expressions are obtained for currents of transient and steady regimes. A block diagram of the device is shown. Results of analysis show that currents of a 3-phase short circuit exceed the currents of a 2-phase short circuit by 1.1-1.5 times. 3 ill. 2 ref. V.Sh.

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USSR

UDC: 8.74

PETROV, Ye. A.

"Analysis of Some Methods of Abbreviated Recording in Information Matrix Computer Memories"

V sb. Teoriya i praktika sbora, peredachi i obrabotki ekon. inform. (Theory and Practice in the Collection, Transmission and Processing of Economic Information—collection of works), Moscow, 1971, pp 104-112 (from RZh-Kibernetika, No 4, Apr 72, Abstract No 4V546)

Translation: The following methods of abbreviated recording in information matrix computer memories: the method of logic scales, the method of intervals, the method of comparison of the indices of the matrix elements. For each method, formulas are derived for determining the expenditure of machine time on sampling an individual element of the matrices and the memory volume taken up. The conditions of using each method are considered. It is noted that the time expended on sampling an individual matrix element and the memory volume occupied in the method of logic scales are less than the corresponding time in the method of comparison of indices since access to the matrix element is direct, and only the matrix elements are recorded in the memory and not their coordinates. V. Mikheyev.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

UDC: 533.9.07:541.196.138

USSR

BLINOV, L. M., LYSOV, G. V., PETROV, Ye. A.

"A High-Frequency Plasmatron"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, 1970, Author's Certificate No 266106, filed 26 Feb 68, pp 74-75

Abstract: This author's certificate introduces: A high-frequency plasmatron which contains a quartz tube with a fitting for tangential or axial gas supply, and a system for excitation of an electromagnetic field. As a distinguishing feature of the patent, the device is designed for producing a continuous ionized flow of nonequilibrium plasma with a gas temperature of 200-500°C. Coaxial with the quartz tube is a circular waveguide to the outside of which a rectangular waveguide is connected through a lead-in aperture in such a way that its wide wall is perpendicular to the axis of the circular waveguide for excitation of the Eol mode from an SHF pulse oscillator. A second rectangular waveguide is similarly connected with its wide wall parallel to the axis of the circular waveguide for excitation of the Hill mode from a continuous SHF oscillator. 2. A modification of this plasmatron in which the distinguishing features are channel matching and wave reduction. Both rectangular waveguides are located a certain distance from

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LINOV, L. M., et al. Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 11, 1970,

one another lengthwise on the same side of the circular waveguide, the input apertures are covered by metal wires to prevent cross influence of the waves, and identical waveguide sections with matched water loads [sic] are symmetrically connected to the opposite side of the circular waveguide.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

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UDC 669.71:621.035

PETROV, YE. M.

"Basic Areas of Development of a Raw Material Base for Producing the Anode Mass at Aluminum Plants"

Tr. Vses, n.-i. i proyektn. in-ta alyumin., magn. i elektrodn. prom-sti (Works of the All-Union Scientific Research and Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 71, pp 5-9 (from RZh-Metallurgiya, No 4, Apr 71, Abutract No 4G216)

Translation: A generalization of the first results of economic study of new low-ash carbon materials suitable for anode mass production is presented. The technical and economic prerequisites and basic economic indexes of producing petroleum coke from retarded coking, shale coke, coal pitch, and petroleum pitch and also the addition of a number of unconditioned materials are investigated. Arguments are presented regarding the most effective means of forming the carbon raw material base for the aluminum production on the basis of comparing the economic production indexes and consumer qualities of the new materials.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

UDC: 619:616.986.7°036.2:636

SOLOSHENKO, I. Z., PETROV. Ye. M., SHOROKHOV, V. V., DROGUN, A. G., REYCHUK, Ye. A., and OBOLONKOVA, L. K., Institute of Epidemiology and Microbiology imeni N. F. Gamaleya, Academy of Sciences USSR, and Moscow Technological Institute of Meat and Dairy Industry

"Problems of Leptospirosis Epizootiology"

Moscow, Veterinariya, No 12, Dec 70, pp 41-43

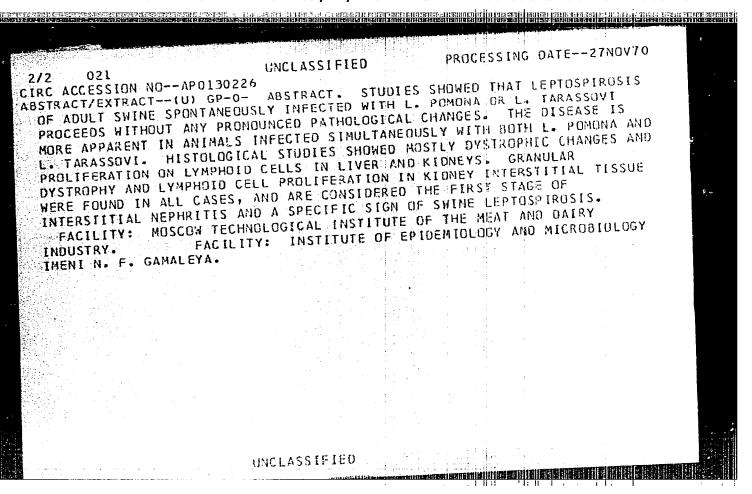
Abstract: Cattle, hogs, horses, and sheep in several regions of the Soviet Union were subjected to serological studies (microagglutination), culturing kidney suspensions, and microscopic examination of wrine, with subsequent infection of guines pigs. Leptospira tarassovi and pomona were agents in hogs. The possibility of infection in the Ulyanovsk region by L. grippotyphosa is not excluded. Cattle spear to be infected by L. pomona, hebdomadis, and tarassovi. Antibodies for tarassovi, icterohaemorrhagiae, and australis were most frequently observed in the blood sera of horses. The L. ballum group was found in the sera of sheep and goats. Antibody liters in all serological groups were low. Acute infections did not exist among test animals.

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UNCLASSIFIED TITLE-THE PATHOMORPHOLOGY OF SWINE LEPTOSPIROSIS UPON SPONTANEOUS EINFECTION -U-AUTHOR-(04)-DROGUN, A.G., SHOROKHOV, V.V., SOLOSHENKO, I.Z., PETROV, YE.H. COUNTRY OF INFO--USSR SOURCE--VETERINARIYA, 1970, NR 2, PP 47-49 DATE PUBLISHED ---- 70 SUBJECT AREAS-BIOLOGICAL AND MEDICAL SCIENCES TOPIC TAGS--LEPTOSPIROSIS, HOG, LYMPHOID TISSUE, LIVER, KIDNEY, HISTOLOGY CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0346/70/000/002/0047/0049 PROXY REEL/FRAME--3003/1216 CIRC ACCESSION NO--APO130226 UNCEASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"



USSR

UDC 621.385.832.032.269.1.001

PETROV Ye. N.

"Some Approximation of an Electron-Optical System Forming a Straight-Line Electron Stream With a Temperature Distribution Normal to the Cathode of the Components of the Initial Velocities"

Elektron. tekhnika. Nauchno-tekhn. sb. Elektron. SVCh (Electronic Technology. Scientific-Technical Collection. Microwave Electronics), 1970, Issue 12, pp 50-55 (from RZh--Elektronika i yeye primeneniye, No 5, May 1971, Abstract No 5A216)

Translation: The problem is considered of the synthesis of an electrostatic gum with a straight-line electron stream. Approximate solutions are presented of the corresponding Cauchy problem for Laplace's equation, obtained by means of analog simulation and analytically on the basis of some approximation of the Langmuir solution. Analytical approximations are explained, permissible from the point of view of the practical realization of an approximate solution of the problem of synthesis. Summary.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

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1/2 010 UNCLASSIFIED PROCESSING DATE--13NOV70
TITLE--A TENSIMETRIC STUDY OF THE SYSTEM GALLIUM BROMINE -U-

AUTHOR-(02)-KULYUKIN, V.N., PETROY, YE.S.

COUNTRY OF INFO--USSR

SOURCE-IZVESTIYA SIBIRSKOGO OTDELENIYA AKADEMII NAUK SSSR, NO 4, SERIYA KHIMICHESKIKH NAUK, 1970, NR 2, PP 43-50 DATE PUBLISHED----70

SUBJECT AREAS-CHEMISTRY

TOPIC TAGS-GALLIUM, BROMINE, VAPOR PRESSURE

CONTROL MARKING-NO RESTRICTIONS

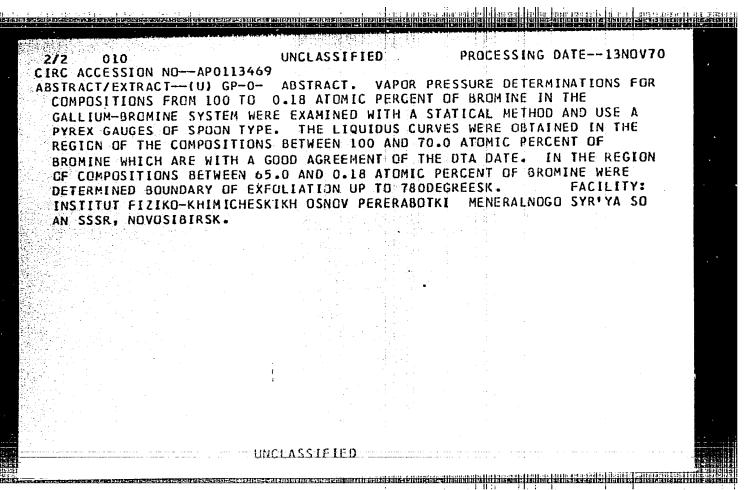
DOCUMENT CLASS—UNCLASSIFIED PROXY REEL/FRAME—1993/0578

STEP NO--UR/0289/70/000/000/0043/0050

CIRC ACCESSION NO--APOL13469

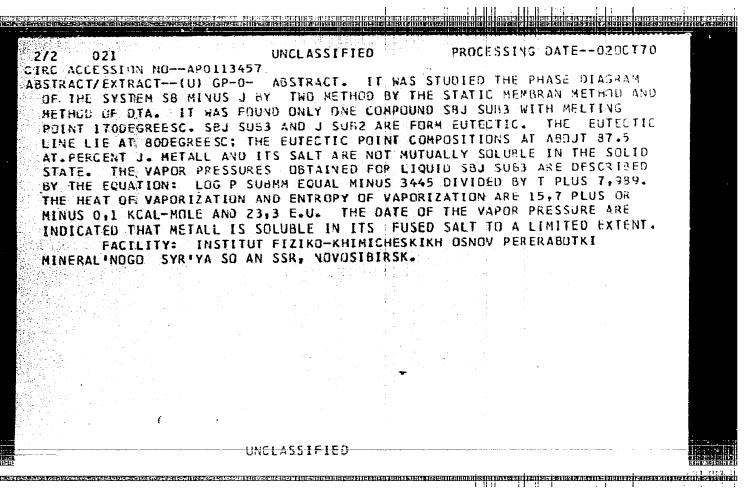
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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

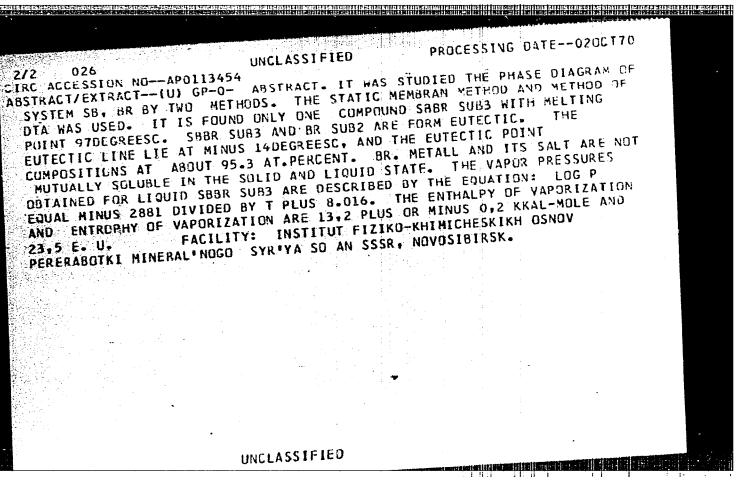


172 021 UNCLASSIFIED PROCESSING DATE--0200170 TITLE-THE PHASE DIAGRAM AND SATURATED VAPOR PRESSURES IN THE SYSTEM SH. J AUTHOR-1021-USTINOV, A.I., PETROV, YE.S. COUNTRY OF INFO--USSR SOURCE--IZVESTIVA SIBIRSKOGO OTDELENIVA AKADEHII HAUK \$SSR. NO 4, SERIYA KHIMICHESKIKH NAUK, 1970, NR 2, PP 30-36 DATE PUBLISHED-----70 SUBJECT AREAS -- CHEMISTRY, PHYSICS TOPIC TAGS-VAPOR PRESSURE, THERNAL ANALYSIS, ANTIMONY, IDDITE, PHASE DIAGRAM, ENTROPY CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0289/70/000/000/0030/0036 PROXY REEL/FRAME--1993/0566 CIRC ACCESSION NO--APO113457 UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"



1/2 Q26 UNCLASSIFIED PROCESSING DATE--02UCT70 TETLE--THE PHASE DIAGRAM AND SATURATED VAPOUR PRESSURES IN THE SYSTEM SB. AUTHOR-(02)-USTINGV. A.I., PETROV. YE.S. COUNTRY OF INFO-USSR SOURCE--IZVESTIYA SIBIRSKUGU OTDELENIYA AKADEMII NAUK SSSR, NO 4, SERIYA KHIMICHESKIKH NAUK, 1970, NR 2, PP 36-43 DATE PUBLISHED-----70 SUBJECT APEAS--CHEMISTRY, PHYSICS TOPIC TAGS - ANTIMONY, BROMINE, THERMAL ANALYSIS, BROMIDE, ENTHALPY, VARGRIZATION, ENTROPY, EUTECTIC, PHASE DIAGRAM CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFTED STEP NO--UR/0289/70/000/000/0036/0043 PROXY REEL/FRAME--1993/0563 CIRC ACCESSION NG-- 4P0113454 __UNCLASSIFIED



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USSR

UDC 621.311.25:0621.362:538.41.001.2

KUGUSHEV, N. M., ZLATIN, D. A., PETROV, Yu. A., MAKIN, S. A.

"Design and Construction of Electric Power Plants With Magnetohydrodynamic Generators"

Tr. Vses. proyektn. in-ta "Teploelektroproyekt" (Works of the All-Union State Institute for the Design and Planning of Electrical Equipment for Heat Engineering Installations), 1970, vyp. 9, pp 95-110 (from RZh-Elektrotekhnika i energetika, No 9, Sep 70, Abstract No 9All9)

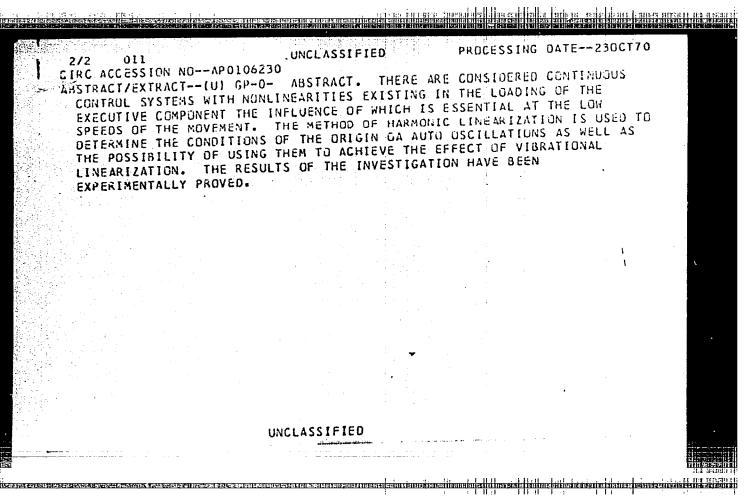
Translation: A brief exposition is given of the characteristics of practical utilization of the MHD method of energy conversion. Possible technological diagrams of electric power plants with MHD generators are described as well as methods for further developments along these lines. Consideration is given to the planning of new non-standard equipment, a brief description of the characteristics of systems for control, automation and protection of equipment, as well as basic solutions for putting together the main building. Four illustrations, bibliography of four titles.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

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PROCESSING DATE--230CT70 UNCLASSIFIED TITLE--DYNAMICS OF SYSTEMS OF CONTROL AT LOWER LIMIT OF RANGE OF 1/2 011 CONTROLLING UNDER NOHLINEAR DAMPING -U-AUTHOR-(05)-DANILOV, YU.A., KAZHIRENKO, V.F., KUZMIN, A.N., PAREENOV, COUNTRY OF INFO--USSR SOURCE--AVTOMATIKA I TELEMEKHANÍKA, 1970, NR 3, PP 162-173 DATE PUBLISHED-----70 SUBJECT AREAS -- MATHEMATICAL SCIENCES, MECH., IND., CIVIL AND MARINE ENGR TOPIC TAGS--DYNAMIC SYSTEM, NONLINEAR AUTOMATIC CONTROL SYSTEM, HARMONIC FUNCTION, LINEAR APPROXIMATION CONTROL MARKING--NO RESTRICTIONS STEP NU--UR/0103/70/000/003/0162/0173 DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1988/1474 CIRC ACCESSION NO--APO106230 UNCLASSIFIED



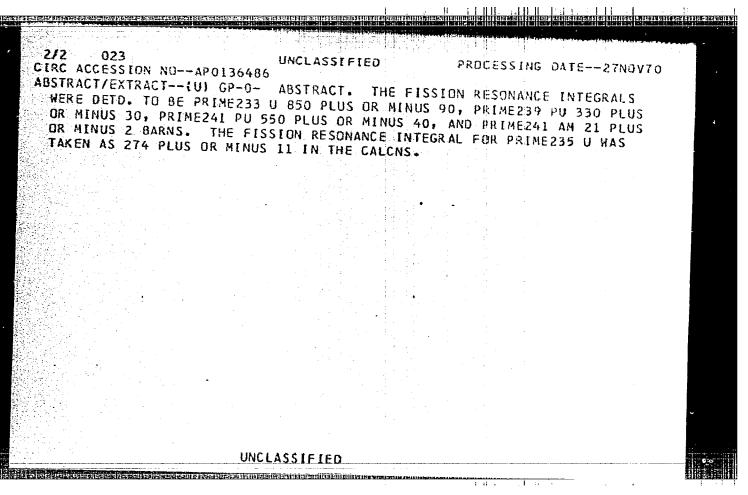
UNCLASSIFIED PROCESSING DATE--27NOV70 TITLE--RESONANCE INTEGRALS OF THE FISSION OF URANIUM, PLUTONIUM, AND AMERICIUM ISOTOPES -U-AUTHOR-(05)-PETRAZHAK, K.A., BAK, M.A., PETROV, YU.G., ROMANCV, YU.F., SHLYAMIN, E.A. COUNTRY OF INFO--USSR SOURCE--AT. ENERG. 1970, 28(CT), 359-60 DATE PUBLISHED ---- 70 SUBJECT AREAS--PHYSICS, NUCLEAR SCIENCE AND TECHNOLOGY TOPIC TAGS -- NUCLEAR FISSION, NUCLEAR RESONANCE, INTEGRAL FUNCTION, URANIUM, PLUTONIUM. AMERICIUM, FISSION CROSS SECTION CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/1066

STEP NO--UR/0089/70/028/000/0359/0360

CIRC ACCESSION NO--AP0136486

UNCLASSIFIED



UDC 534.2:532

PETROV, YU. I.

"Use of Thermoanemometric Measurements When Studying the Aerodynamic Noise of Marine Ventilation Systems"

Tr. Leningr. korablestroit. in-ta (Works of Leningrad Shipbuilding Institute), 1972, vyp. 77, pp 25-28 (from RZh--Mekhanika, No 6, Jun 73, Abstract No 6B247)

Translation: A thermoanemometer can be successfully used to measure the parameters of the air flow when studying the aerodynamic noise of centrifugal fans. By a thermoanemometer, it is possible to measure the velocity diagram of a non-this diagram permits correct calculation of the rotating rotor vanes. Knowledge of the body around which flow takes place behind the rotor for which noise from nonuniformity of the flow is excluded. Another important case of the application of a thermoanemometer is determination of the noise intensity which the fan. For this purpose, in individual regions of the flow-through section correlation between them, the volume of the characteristic vortex and the characteristic pulsation frequency are measured, and then the sonic power is estimated by these data considering the general theory of vortex noise. The

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UDC: 534.322.3+534.83

PETROV, Yu. I.

"Using Hot-Wire Anemometer Measurements in Studying the Aerodynamic Noise of Ship's Fans"

Tr. Leningr. korablestroit. in-ta (Works of Leningrad Shipbuilding Institute), 1972, vyp. 77, pp 25-28 (from RZh-Fizika, No 5, May 73, abstract No 5Zh583 by E. I. Denisov)

Translation: In studying the aerodynamic noise of fans, one encounters problems which may be successfully solved by hot-wire anemometer measurement of airflow parameters. One of these is determination of the velocity curve of nonhomogeneous flow behind the trailing edges of rotating blades of fans to calculate the angle of inclination of the fairing surface located behind the rotor of the fan. The paper gives a block diagram together with an example of hot-wire anemometer measurement of the velocity curve for various distances to the rotor of a squirrel-cage fan. Another important case of application of hot-wire anemometer measurement is determination of the contribution of separate aerodynamic sources to the over-all acoustic energy emitted by the fan. This contribution may be calculated from known characteristics of turbulence. By using hot-wire anemometer measurement and the general theory of vortex noises, one can determine the acoustic power emitted by any region of the flow section of a fan.

- 18 -

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

1/2 061 UNCLASSIFIED PROCESSING DATE--230CT70
TITLE--CLARIFICATION AND DISINTEGRATION OF GASEOUS BORON TRICHLORIDE (BCL SUB3) BY RADIATION OF A CO SUB2 LASER -UAUTHOR-(05)-ARAKELYAN, V.S., KARLOV, N.V., KUZMIN, N.V., PETROV, YU.N.,
STELMAKH, D.M.
COUNTRY OF INFO--USSR

SOURCE-MOSCOW, RADIOTEKHNIKA I ELEKTRONIKA, NO 3, MAR 70, PP 634-635

DATE PUBLISHED ---- 70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--LASER EXCITATION, CARBON DIDXIDE LASER, BORON FLUORIDE, ABSORPTION COEFFICIENT, RESONANCE ABSORPTION, GAS DISSOCIATION, GAS PRESSURE, RADIATION INTENSITY/(U) IKS21 SPECTROPHOTOMETER

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1987/1461

STEP NO--UR/0109/70/000/003/0634/0635

CIRC ACCESSION NO--APO104757

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

TO ALCO ALL AND A CONTROL OF THE PROPERTY OF T

PROCESSING DATE--230CT70 UNCLASSIFIED 061 2/2 CIRC ACCESSION NO--APO104757 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PAPER DISCUSSES THE RESULTS OF EXPERIMENTS CONCERNED WITH A DETERMINATION OF THE SATURATION FACTOR AND LIFE TIME OF OSCILLATION OF GASEOUS VORON TRICHLORIDE (BCL SUB3) AND ALSO THE DISINTEGRATION OF THE BCL SUB3 PRIMES MOLECULE BY THE RADIATION OF A CO SUB2 LASER. THE DEPENDENCE OF THE RESONANT ABSORPTION MEASUREMENTS WERE MADE AT ROOM COEFFICIENT ON PRESSURE IS SHOWN. TEMPERATURE IN A VESSEL 10 CM LONG AND 2.8 CM IN DIAMETER WITH THE AID OF A IKS 21 SPECTROMETER. IN THE REGION OF NONHOMOGENEOUS BROADENING EXTENING AT LEAST TO 5-7 TOR, THE VALUES OF THE ABSORPTION COEFFICIENT AMOUNTED TO ALPHA EQUALS 0.04 CM PRINE NEGATIVE! TOR, WHICH CORRESPONDS TO THE ABSORPTION CROSS SECTION SIGNA EQUALS 1.1 TIMES 10 PRIME NEGATIVE18 CM PRIME 2. THE SATURATION ABSORPTION WAS INVESTIGATED WITH THE AID OF A CO SUB2 LASER WITH AN OUTPUT POWER UP TO 100 WATT. CHANNEL METHOD WAS USED FOR SIMULTANEOUS MEASUREMENT OF THE RADIATION POWER ENTERING THE VESSEL WITH THE BCL SUB3 AND LEAVING THE VESSEL. POWER LEVEL WAS CHANGED BY A GAS ATTENUATOR IN THE BCL SUB3. THE GAS ATTENUATOR MADE IT POSSIBLE TO CHANGE THE INTENSITY OF THE LASER BEAM, NOT CHANGING THE ENERGY DISTRIBUTION IN THE CROSS SECTION OF THE BEAM. CONTROL OF THE ATTENUATOR WAS ACCOMPLISHED BY A CHANGE OF THE GAS PRESSURE. THE AUTHORS THANK A. M. PROKHOROV FOR CONSTANT ATTENTION TO THE WORK AND FRUITFUL DISCUSSIONS, AND ALSO YU. B. KONEY FOR FREQUENT USEFUL DISCUSSIONS.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

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UDC 621.9.047

PETROV, YU. N., Kishinev

"Contemporary State of Investigations in the Area of Electrochemical Dimensional Machining of Metals"

Kishinev, Elektronnaya Obrabotka Materialov, No 2, 1970, pp 14-19

Abstract: An analysis is presented of the state of research in the area of electrochemical dimensional machining of metals. Results are noted of the technological utilization and insufficient development of investigations devoted to the theory of the process. Based on an extensive amount of experimental materials, some principal directions of theoretical investigations of the embossing during electrochemical dimensional machining of metals are presented.

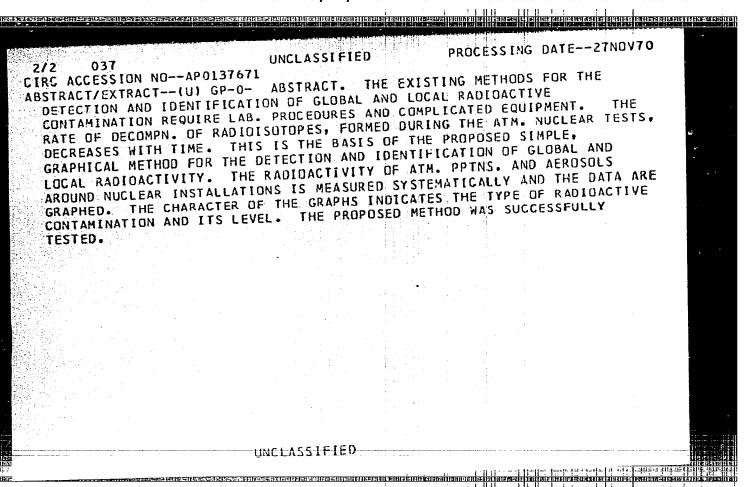
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UNCLASSIFIED PROCESSING DATE--27NOV70 TITLE--DETECTION AND IDENTIFICATION OF A RADIOACTIVE CLOUD BY A SIMPLE RADIOMETRIC METHOD -U-AUTHOR-PETROV, YU.N. COUNTRY OF INFO--USSR SOURCE--AT. ENERG. 1970, 28(5), 431-2 DATE PUBLISHED----70 SUBJECT AREAS--ATMOSPHERIC SCIENCES, NUCLEAR SCIENCE AND TECHNOLOGY TOPIC TAGS--RADIOACTIVE CONTAMINATION, RADIOACTIVE ISOTOPE, ATMOSPHERIC PRECIPITATION, AEROSOL, NUCLEAR EXPLOSION, RADIOACTIVITY, RADIOMETRY CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0089/70/028/005/0431/0432 PROXY REEL/FRAME--3008/0586 CIRC ACCESSION NO--APO137671 UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"



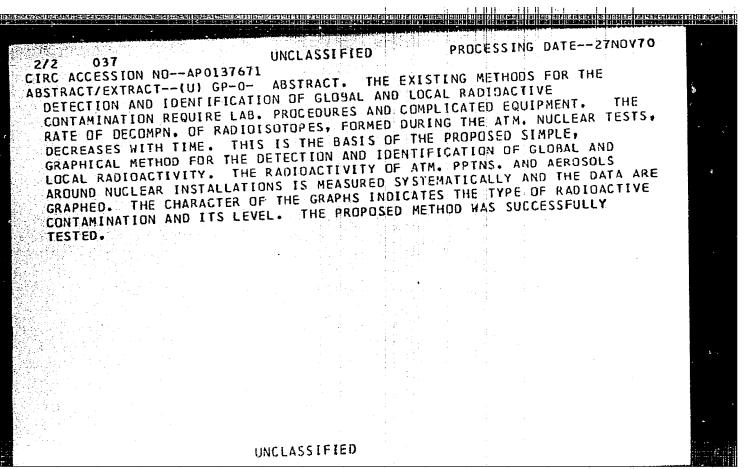
UNCLASSIFIED PROCESSING DATE--27NUV70 TITLE--DETECTION AND IDENTIFICATION OF A RADIDACTIVE CLOUD BY A SIMPLE 037 RADIOMETRIC METHOD -U-AUTHOR-PETROV. YU.N. COUNTRY OF INFO--USSR SOURCE--AT. ENERG. 1970, 28(5), 431-2 DATE PUBLISHED ---- 70 SUBJECT AREAS--ATMOSPHERIC SCIENCES, NUCLEAR SCIENCE AND TECHNOLOGY TOPIC TAGS--RADIOACTIVE CONTAMINATION, RADIOACTIVE ISOTOPE, ATMOSPHERIC PRECIPITATION, AEROSOL, NUCLEAR EXPLOSION, RADIOACTIVITY, RADIOMETRY CONTROL MARKING--NO RESTRICTIONS STEP NO--UR/0089/70/028/005/0431/0432 DOCUMENT CLASS--UNCLASSIFIED

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PROXY REEL/FRAME--3008/0586

CIRC ACCESSION NO--APO137671

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"



1/2 023 UNCLASSIFIED PROCESSING DATE--230CT70
TITLE--DEFECTS IN THE CRYSTAL STRUCTURE OF UNTEMPERED HIGH CARBON
MARTENSITE -U-

AUTHOR-(02)-GRIDNEY, V.N., PETROY, YU.N.

COUNTRY OF INFO--USSR

SOURCE--UKR. FIZ. ZH. (RUSS. ED.) 1970, 15(2), 217-23

DATE PUBLISHED ---- 70

SUBJECT AREAS--MATERIALS

TOPIC TAGS--HIGH CARBON STEEL, MARTENSITIC TRANSFORMATION, CRYSTAL DISLOCATION, STEEL QUENCHING, MANGANESE STEEL, ELECTRON DIFFRACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--1996/1929

STEP NO--UR/0185/70/015/002/0217/0223

CIRC ACCESSION NO--APO118891

UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

2/2 023 UNCLASSIFIED PROCESSING DATE--230CT70 CIRC ACCESSION NO--APO118891 ABSTRACT/EXTRACT--(U) GP-0-ABSTRACT. A SMALL ADMIXT. OF MN IN THE SOLID SOLN. OF ALPHA IRON SUPERSATD. WITH C LOWERED THE MARTENSITIC TRANSFORMATION TEMP. OF AUSTENITIC STEEL TO UNDER ROOM TEMP. CONSEQUENTLY, AFTER QUENCHING IN WATER, THE STEEL SAMPLE CONTG. 115PERCENT C AND 1.9PERCENT MN WAS THE UNLY AUSTENITIC MODIFICATION OBTAINED. THIS WAS COOLED DURING ELECTRON DIFFRACTION SCANNING FROM ROOM TEMP. TO MINUSBODEGREES UNTIL MINUS 100DEGREES SO THAT THE UNINTERRUPTED STUDY OF THE MARTENSITIC TRANSFORMATION AND OF THE CREATED MARTENSITE WAS THUS MADE POSSIBLE WITHOUT WARMING TO ROOM TEMP. THE UNTEMPERED MARTENSITE CRYSTALS CREATED AT MINUSBO TO MINUS 100DEGREES HAVE A HIGH D. OF LINEAR AND PLANAR DEFECTS. THE DISLOCATION D. IN THIN FOILS OF HIGH C MARTENSITE CAN BE SUBSTANTIALLY LOWERED DUE TO THE LOSS OF A PART OF THE DISLOCATIONS AFTER ELECTROPOLISHING, UNLESS SPECIAL PRECAUTIONS FOR THEIR FIXATION ARE TAKEN. THIN STRIPS OF FCC. STRUCTURE WERE OBSD. IN THE (110) PLANES. TWO SYSTEMS OF PARALLEL DISLOCATIONS WERE OBSO., SCREW AND EDGE DISLOCATIONS WITH THE BURGERS VECTOR A-2 MEAN VALUE OF 111. THE DISLOCATION D. WAS GREATER THAN OR EQUAL TO 10 SUB11 CM PRIME THE DISLOCATION NET DIVIDES THE MARTENSITIC CRYSTAL INTO NEGATIVE 2. BLDCKS SIMILAR TO 100 AMGSTROM EACH. BEYOND THE DISLUCATIONS, THIN THINS OF THE SYSTEMS (112) MEAN VALUE OF 111 AND (110) MEAN VALUE OF 110 WERE DBSD. FACILITY: INST. METALLOFIZ., KIEV, USSR HMC LASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

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VDC 621.793.3.669.245.781

KOVALEY, Y. V., MARKUS, M. M., and PETROY. YU. N.

"Phase and Structural Conversions in Boron-Containing Nicke Films"

Bul. Akad. Shtiintse RSSMold, Izv. AN MOLD SSR. Ser. fiztekh. i mat. n. (Bulletin of the Academy of Sciences Moldania SSR. Physical Technical and Mathematical Science Series), No 3, 1972, pp 53-61 (from Referativnyy Zhurmal -- Khimiya, No 8(II), 1973, Abstract No 81318)

Translation: A study was performed on the structure of chemically precipitated Ni-B films, both of the original composition and after different thermal treatments. Electronographic methods of analysis indicated that prior to the thermal treatment, the films have a highly despersed GTSK (expansion unknown) for nickel in a mixture amorphous boron. As a result of the annealing different borides are formed; however, theri composition is essentially related to the concentration of B in the film. X-ray studies show the formation of compounds Ni₂B (at 310°), Ni₂B, and a previously unknown compound having the presumed composition Ni₂B₂(at 410°). It was observed that the compound Ni₂B₂ is thermally unstable and decomposes into the phases Ni₂B and Ni₂B. It was shown that the thermal treatment of Ni₂B films in air accompanied by oxidation reduction processes may lead to a reduction in the content of the borides in the film, to the separation of free Ni₂ and to the growth of grains of nickel which in turn causes a rapid reduction the microhardness. 1/1

USSR

UDC 621.317.78.023

KOTOSONOV, N. V., DUDKIN, V. P., PETROV, YU. N.

"Some Means of Improving the Sensitivity of a Superhigh Frequency Power Indicator by Using the Hall Effect"

Tr. Voronezh. un-ta (Works of Voronezh University), 1971, No 77, pp 44-49 (from RZh-Radiotekhnika, No 10, Oct 71, Abstract No 10A179)

Translation: A study was made of the basic characteristics of a superhigh frequency power indicator in the Hall effect and certain means of improving its sensitivity. The theoretical possibility of improving the sensitivity of the wattmeter in the Hall sensor using a ring resonator is demonstrated. Results are presented from an experimental study of the sensitivity of the cooled Hall sensor in the superhigh frequency range. There are 3 illustrations and a 5-entry bibliography.

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YEVSEYEV, L. A., and PETROV, YU. P.

"Solution of a Plane Problem for a Rectangular Plate"

Samoletostr. i Tekhn. Vozd. Flota, Resp. Mezhved. Temat. Nauchno-Tekhn. Sb. (Aircraft Construction and Air Force Equipment. Republic Interdepartmental Thematic Scientific and Technical Collection of Works), No 24, 1971, pp 43-49 (from Referativnyy Zhurnal, Mekhanika, No 2, Feb 72, Abstract No 2V65, Authors' abstract)

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

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TROCESSING DATE--20NOV70

TITLE-THERMAL DECOMPOSITION OF METHYL NITRITE IN SHOCK WAVES. I. INITIAL STAGE OF THE DECOMPOSITION AND MECHANISM OF H SUB 2 CO* CHEMILUMINESCENCE.

AUTHOR-ZASLONKO, I. S., KOGARKO, S. M., MOZZHUKHIN, E. V., PETROV, YU. P., BORISOV, A. A

COUNTRY OF INFO--USSR

SOURCE--KINET. KATAL. 1970, VOL 11, NR 2, PP 296-304

DATE PUBLISHED----70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TCPIC TAGS—THERMAL DECOMPOSITION, NITRITE, CHEMILUMINESCENCE, ORGANIC NITROGEN COMPOUND, SPECTRUPHUTOMETRIC ANALYSIS, FORMALDEHYDE, METHANOL

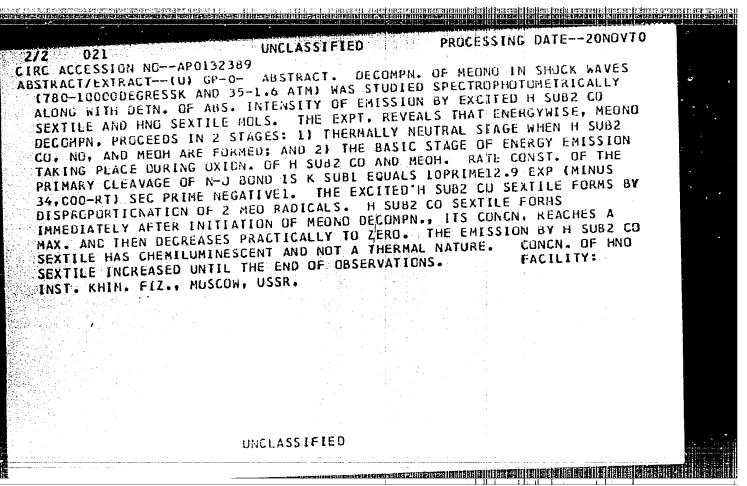
CENTROL MARKING-NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED PRUXY REEL/FRAME--3005/0096

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CIRC ACCESSION NO--AP0132389

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ZASLONKO, I.S., KOGARKO, S.M., MOZZHUKHIN, YE.V., PETROV, YILP., and BORISOV, A.A.
Institute of Chemical Physics, Moscow, Academy of Sciences USSR

"Thermal DEcomposition of Methyl Nitrite in Shock Waves. I. The Initial Stage of Decomposition and the Mechanism of Chemiluminescence of H2CO and HNO "

Moscow, Kinetika i Kataliz, Vol 11, No 2, Mar-Apr 70, pp 296-304

Abstract: The decomposition of MeCNO in shock waves at temperatures of 780-1000°K and pressures of 0.35-1.6 atm was studied on mixtures of MeCNO (0.7-1.5%) with Ar by carrying out spectoscopic measurements. The velocities of decomposition of MeCNO and the intensities of emission by the electronically excited molecules HgCO and HNO that formed in its decomposition were determined. The velocity constant of the primary process of cleavage of the O-N bond was ky = 1012,9 exp(-3400/RT) sec-1. It was established that the excitation of H₂CO took place as a result of its formation by the reaction 2 MeO \rightarrow H₂CO + MeOH. The probability of excitation was very low and corresponded to a ratio of \sim 10-10. The excitation of HNO in the early stage of decomposition was most likely due to the reaction H + NO + Me--HNO + Me. Addition of NO to the mixture initially increased the rate of decomposition of MeONO to some extent because of the reaction MeONO + NO \rightarrow (MeO, H2CO, MeOH) and then reduced it because of the reaction MeO + NO -> MeONO. From the energy 1/2

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UDC 625.78.018.1(088.8)

KREMENA, V. P., PETROV, Yu. V., TRUSHECHKIN, N. P.

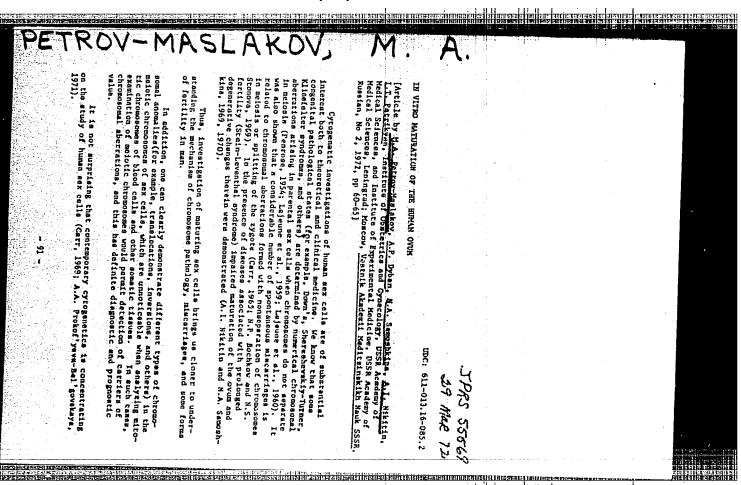
"Device for Determination of Velocity in Wind Tunnels"

USSR Author's Certificate No 307343, filed 15/10/69, published 8/09/71, (Translated from Referativnyy Zhurnal, Raketostroyeniye, No 4, 1972, Abstract No 4.41.169 P from the Resume).

Translation: A device for determination of velocity in shock tunnels containing a standard frequency generator, switch, counter and two master sensors, differing in that in order to eliminate losses of information resulting from the effects of electromagnetic interference, for example when operating with electric-discharge tubes, as well as interference from the reflected wave, the permit and forbid inputs of the switch are connected to sensors through the blocking unit and an OR circuit, the cross section of the tunnel between the diaphragm and the sensors contains an additional sensor which is connected through an AND circuit to the permit input of the blocking unit, the second through an AND circuit and the zero-setting circuit of the counter, while the second input of the AND circuit is connected through a pulse expander to the starting device of the tunnel. I Figure.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"



USSR

UDC 669.71.017:539.3/5.01

YELAGIN, V. I., SINYAVSKIY, V. S., PETROVA, A. A., and VAL'KOV, V. D.

"The Effect of Methods of the Homogenization of Ingots on the Structure and Mechanical and Corrosion Properties of Semifinished Products of Alloys of the System Al-Zn-Mg"

Metallovedeniye Splavov Legkikh Metallov-Sbornik, Moscow, "Nauka", 1970, pp 5-10, resume

Translation: The effect of the method of homogenization on the structure, mechanical properties, and corrosion resistance of shapes and sheets of alloy 01911 was investigated. Optimum homogenization methods are recommended. Five figures, fifteen bibliographic references.

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1/2 026 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--INTERACTION OF A SILCON SURFACE WITH CHEMICALLY ACTIVE ELECTROLYTES

AUTHOR-(02)-PETROVA, A.G., RAKOV, A.V.

CCUNTRY CF INFO--USSR

SOURCE--FIZ. TEKH. PCLUPROV. 1970, 4(4), 697-701

DATE PUBLISHED ---- 7C

SUBJECT AREAS-CHEMISTRY

TOPIC TAGS—ELECTROLYTE, COPPER, MERCURY, SILVER, GOLD, SILICON, CHEMICAL REACTION RATE, ZINC, IRON, NITRIC ACID

CENTREL MARKING--NO RESTRICTIONS

PROXY REEL/FRAME--3004/2024

STEP NO--UR/0449/70/004/004/0697/0701

CIRC ACCESSION NG--AP0132283

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

UNCLASSIFIED PROCESSING DATE-- 20NCV70 2/2 026 CIRC ACCESSION NO--APO132283 ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE INTERACTION OF N-SI (1 OHM-CM) WAS ETCHING ACID SOLNS. CONTAMINATED WITH METAL IONS WAS INVESTIGATED. THE FACE OF THE SAMPLES CORRESPONDED TO THE (111) PLANE. AFTER TREATMENT IN THE RESP. ETCHANT, THE SAMPLES WERE THOROUGHLY RINSED IN DEIGNIZED WATER. THE SURFACE CONTAMINATION WAS DETECTED BY EMISSION SPECTRAL ANAL. THE METAL IONS WERE STRIPPED OFF THE SI SURFACE BY DESORPTION WITH 2.4. PENTANEDIONE AND FIXED IN A 4PERCENT SOLN. OF PULY(METHYL METHACRYLATE) IN TOLUENE. AFTER EVAPN., THE RESIDUAL FILM WAS EXPOLIATED. THE METAL CONCINS. IN THE ETCHANTS WERE 10 PRIME NEGATIVES M. THE TEST SCLNS. WERE: (1) 45PERCENT HF, (2), 63PERCENT HND SUB3, AND (3) A MIXT. OF HE: HNO SUB3: HOAC EQUALS 1:8:1. THE SURFACE CONCN. OF THE METALS AFTER RINSING DEPENDS ON THE NATURE OF THE METAL AND UF THE SULN. WITH I, THE SURFACE CONCNS. OF CU, HG, AG, AND AU ARE HIGHER THAN THOSE OF ZN AND FE. WITH 2 AND 3, THE SURFACE CONCNS. OF ALL METALS WERE GENERALLY LOWER. THE LOWEST CONCNS. ARE OBSD. IN 2. THE SURFACE CONON. OF OU DECREASES WITH INCREASING HNO SUB3 CONON. THE MECHANISM OF SI DISSULM. AND UF METAL DEPOSITION ON THE SI SURFACE IS DEPENDING ON THE OXIDN. POTENTIAL OF THE METAL AND ON THE HNO SUB3 CONCN., THE IMPURITY IS EITHER DEPOSITIED OR ADSORBED. IN THE IST CASE, THE EFFECTIVE D. OF THE FAST SURFACE STATES IS INCREASED, WHILE IN THE 2ND, THE D. OF THE SLOW STATES IS AUGMENTED.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

USSR

UDC 621.315.592

PETROVA, A.G. and RAKOV, A.V.

"Interaction of a Silicon Surface with Chemically Active Electrolytes"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 4, No 4, 1970, pp 697-701

Abstract: There is very little literature at the present time devoted to the interaction process between a semiconductor surface with acids and etching agents. There should be more, since the study of the physical mechanism involved in such interactions could demonstrate the mechanism of impurity deposition on the surface or of the electronic processes at the interface between semiconductor and electrolyte; it could also provide valuable information on the choice of optimal conditions for chemical processing of the semiconductor surface for modern semiconductor instrument manufacture. The purpose of this paper is to investigate the physical mechanism of the interaction between a silicon surface and electrolytes containing a small quantity of metallic impurity. The specimens used were n-type silicon plates with a specific resistance of 1 ohm cm, all given the same mechanical surface treatment, with the plane of the plate coinciding with the crystalline plane (111). The electrolytes

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PETROVA, A.G., et al., Fizika i Tekhnika Poluprovodnikov, Vol 4, No 4, 1970, pp 697-701

were 45% fluoric and 63% nitric acids, and etching agents using these acids. The metallic impurities introduced into the reagents were gold, silver, mercury, copper, iron, and zinc. The authors conclude that the equilibrium between the deposited atoms and the electrolyte ions is not established as a result of the high porosity because of the separation of gaseous reaction products and stripping of metal films. Hence, the metal deposition process is prolonged, with a time delay resulting from the reduction in the impurity concentration in the electrolyte.

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UDC 621.762.5:661.882.661:665.1

PETROVA, A. M., RADOMYSEL'SKIY, I. D., and TITARENKO, S. V., Institute of Problems of Materials Science, Academy of Sciences Ukrainian SSR

"Structure Formation of Ti-Cr3C2 During Annealing"

Kiev, Poroshkovaya Metallurgiya, No 1, Jan 74, pp 85-89

Abstract: Structure formation was investigated and composition of the carbide phases was determined during amnealing of a Ti-base composite (Ti-Cr3C2) under conditions similar to those used for sintering titanium alloys. It was shown that in the process of annealing extruded samples at 950-1250°C, the chromium carbide dissolves and a new phase -- titanium carbide -- is precipitated. This new phase contained no carbon, which was explained by the non-equilibrium state of the matrix. From determination of phase-structure microhardness after annealing, it was observed that a minimum value of titanium-base microhardness occurs on samples annealed at 1150°C when almost 14% Cr is dissolved in the titanium. Three figures, one table, six bibliographic

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1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--DEXTRIN 4 GLYCOSYLTRANSFERASE IN HUMAN SALIVA -U-

AUTHOR-(02)-VOSKOBOYEV, A.I., PETROVA, A.N.

COUNTRY OF INFO--USSR

SOURCE-DOKL. AKAD. NAUK SSSR 1970, 191(3), 708-10

DATE PUBLISHED-----70

SUBJECT AREAS -- BIOLOGICAL AND MEDICAL SCIENCES

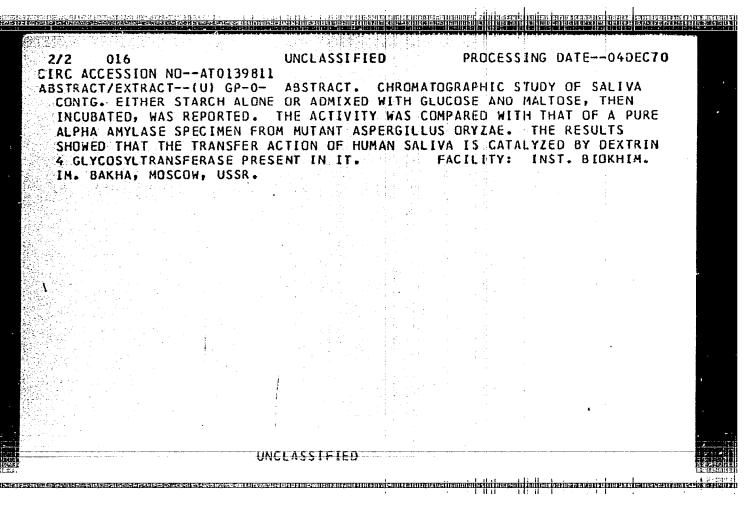
TOPIC TAGS--SALIVARY GLAND, GLUCOSE, STARCH, CHROMATOGRAPHY

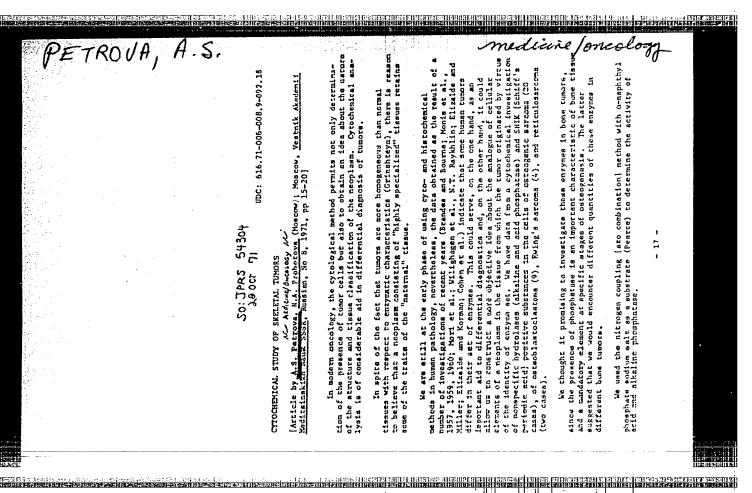
CONTROL MARKING--NO RESTRICTIONS

CIRC ACCESSION NO--AT0139811

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

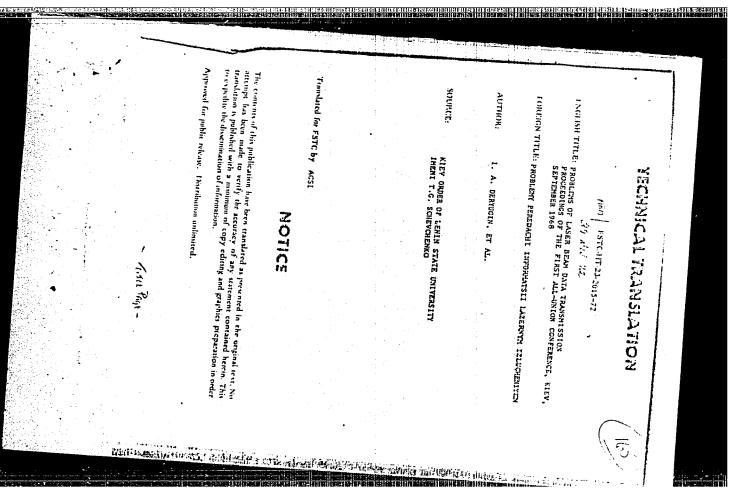




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UBSR

UDC 669.715'782'721:620.178.74

KOROL'KOV, A. M., PETROVA, E. N., FAYGELSON, B. YU.

"Estimating the Inclination of Cast Aluminum Alloys Toward Brittle Fracture when Testing for Impact Bending"

V sb. Struktura i svoystva lekg. splavov (Structure and Properties of Light Alloys -- collection of works), Moscow, Nauka Press, 1971, pp 88-90 (from RZh-Metallurgiya, No 4, Apr 72, Abstract 41632)

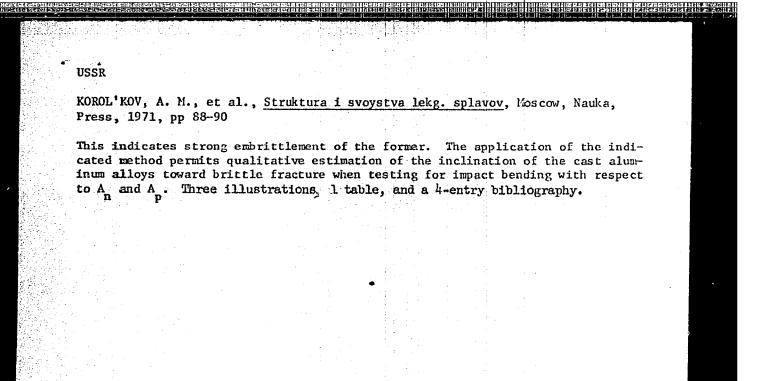
Translation: A study was made of specimens of the Menage type made from A14 aluminum alloys of the A1-Si system and A127-1 aluminum alloy of the A1-Mg system during impact bending on the PSVO-1000 impact tester with oscillographic recording. The work of nucleation of the cracks A_n and the work of propagation of the cracks A_n were determined as functions of the test temperature. The work of destruction of the specimens manufactured from the same allows with a national content.

of the cracks Λ were determined as functions of the test temperature. The work of destruction p of the specimens manufactured from the same alloys with a notch terminating in a fatigue crack during impact bending was determined in parallel. It was demonstrated that the work of fracture in both cases is much less than the impact toughness and although an identical tendency is observed toward variation of both characteristics as a function of the alloy composition, there is no direct correlation. For both alloys, both Λ_{n} and Λ_{n} drop with a reduction in

temperature. A drops especially sharply for AL27-1 by comparison with AL4. $\frac{1}{2}$

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Mechanical Properties

USSR

UDC 620.17:669.71'721

PETROVA, E. N., GERASIMOVA, L. P., and KOROL'KOV, A. M.

"Properties of the Alloy Al-9.5% Mg with Titanium, Zirconium, Molybdenum, and Boron under Tension and Impact Loadings"

Moscow, Metallovedeniye, No 5, 1971, pp 6-8

Abstract: The effect of the alloying elements Ti,Zr, Mo, and B on the mechanical properties and structure of the alloy Al-9.5% Mg was investigated under tension and impact loading conditions. The source of the increased tendency of Al-Mg alloys to formation of cracks was studied on the IMASh-5S-65 installation of the Institute of Machine Studies. Introduction of the additions in quantities of 0.05-0.1% increases the impact ductility. Additions in quantities of 0.5% bring about a sharp decrease of the impact ductility. These relations comply with the resistance to rupture by tension, as determined by the character and distribution of surplus phases. One figure, one table, three bibliographic references.

1/1

USSR

UDC 669.721.725.018.9

TAYTS, A. Yu., ALEKSANDROVSKIY, S. V., ABROSIMOVA, Ye. N., PETROVA, F. A., KHABAROVA, N. P.

"Study of the Process of Production of Magnesium Alloy, Alloyed With Beryllium"

Tr. Vses. N-i. i Proyektn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 144-149. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G201 by the authors).

Translation: A technology is described for production of a casting alloy in the Mg-Al-Zn-Mn system (type MgS5) with be added. Due to the addition of Be, the oxidation of the alloy during melting and pouring is sharply reduced, allowing a decrease in the consumption of S and flux, and the losses of alloy with the bottom sediment are also decreased. Due to the poor solubility of Be in Mg, a 2 or 3 times excess quantity must be introduced to the charge. The influence of slight (5.104-15.10-4%) additions of Be on the structure, and mechanical and corrosion properties of the alloys is studied. The introduction of up to 0.008% Be to the Mg alloy does not result in significant enlargement of the grain, the mechanical properties are not reduced, and the corrosion properties are even increased. The production of Mg alloy with addition of Be has been undertaken on the commercial scale. 3 figs; 1 table; 5 biblio refs.

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USSR

UDC: 681.3.06:51

PETROVA, G. B.

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"On the Problem of Computer Distribution of Algorithms in a Computer Complex"

Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana (Works of the Moscow Higher Technical Academy imeni N. E. Bauman), 1971, No 141, pp 33-38 (from RZh-Kibernetika, No 12, Dec 71, Abstract No 12V951)

Translation: The author considers the following problem. Given an aggregate of algorithms A realized by a set of computers B in a computer complex. The interrelation between the algorithms is modeled by a graph G(x,u), where x is the set of vertices of the graph reflecting individual algorithms aj, and u is the set of arcs reflecting the mutual relations between algorithms: an arc leads from \mathbf{x}_i to \mathbf{x}_k if \mathbf{x}_k receives control or information from x_i . The aggregate of algorithms A must be effectively distributed on the set of computers B. As an example of a test for optimizing the possible versions of distribution, the author chooses the index of total expenditures on transfer of information between computers in the complex for a given arrangement of algorithms. The problem reduces

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

USSR

PETROVA, G. B., <u>Tr. Mosk. vyssh. tekhn. uch-shcha im. N. E. Baumana</u>, 1971, No 141, pp 33-38

to a class of problems in discrete programming, which means that it can be solved by using approximate methods of solving problems on quadratic designations. V. Mikheyev.

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- 68 -

USSR UDC 547.341.07

PETROV, K. A., PARSHINA, V. A., YEROKHINA, T. S., and PETROVA, G. M.

"A Method of Producing Hydroxymethyl-bis-(dialkylaminomethylene) Phosphine Oxides"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 16, Jun 73, Author's Certificate No 375300, Division C, filed 9 Aug 71, published 23 Mar 73, p 52

Translation: This Author's Certificate introduces: 1. A method of producing hydroxymethyl-bis-(dialkylaminomethylene) phosphine oxides. As a distinguishing feature of the patent, trioxymethyl phosphine oxide is reacted with a lower dialkylamine (C \leq 4) in the presence of heating with subsequent isolation of the goal product by conventional methods. 2. A modification of this method distinguished by the fact that heating is done to $100-140^{\circ}$ C in a sealed tube.

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USSR

UDC 574.754.755.756.757

PETROVA, G. N., SHNER, V. F., ALEKSEYEVA, L. M., and SUVOROV, N. N., Moscow Chemico-Technological Institute imeni Mendeleyev, Moscow

"Derivatives of Indole. LXXXIII. Synthesis of Indole and 5-Bromoindole From 2-Naphthol and 6-Bromo-2-naphthol"

Riga, Khimiya Geterotsiklicheskikh Soyedineniy, No 6, Jun 73, pp 753-755

Abstract: Upon the oxidation of 2-naphthol and 6-bromo-2-naphthol with Na2MoO4 + 40% H2O2 in glacial acetic acid, alpha-carboxycinnamic acids were obtained. These acids were converted into the corresponding diamides which, on being subjected to the Hofmann reaction with NaOC1 and KOH, yielded indole and 5-bromoindole, respectively. The oxidation of 5-nitro-2-naphthol under similar conditions led to the formation of the gamma-lactone of 6-nitro-2-carboxycinnamic acid. This compound could be converted into its amide by successive treatment with PC15 and liquid NH3.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

UNCLASSIFIED PROCESSING DATE--04DEC70

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**ITLE--ALTERATION OF NATURAL TITANOMAGNETITE AT HIGH PRESSURES AND

TEMPERATURES -UAUTHOR-(04)-BAGINA, O.L., KARPOVA, O.V., LIVSHITS, L.D., PETROVA, G.N.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, FIZ. ZEMLI 1970, [21, 103-7]

DATE PUBLISHED----70

SUBJECT AREAS--PHYSICS, EARTH SCIENCES AND OCEANOGRAPHY

TOPIC TAGS--IRON ORE, CURIE POINT, THERMAL EFFECT, SOLID SOLUTION, TITANIUM COMPOUND, ARSENIC MINERAL, COPPER COMPOUND, MAGNETIZATION

CONTROL MARKING--NO RESTRICTIONS

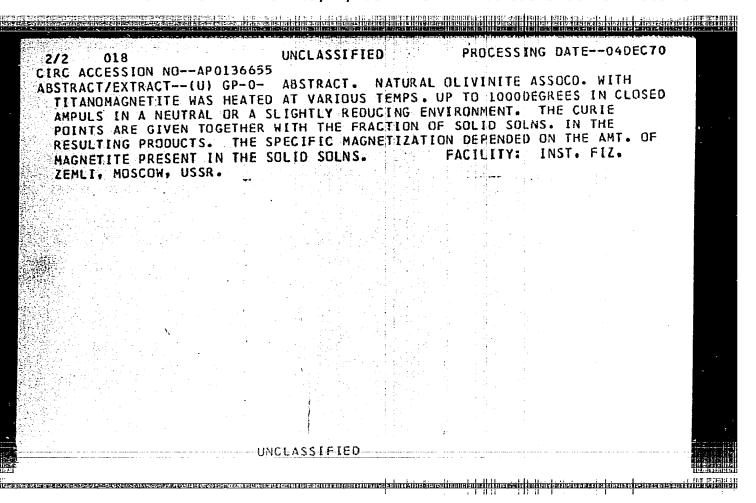
DOCUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3007/1244

STEP NO--UR/0387/70/000/002/0103/0107

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USSR

UDC: 536.2

PETROV, V. A., PETROVA, I. I., NESHPOR, V. S., FRIDLENDER, B. A., KAPRALOV, V. K., BELIK, R. V., Institute of High Temperatures of the Academy of Sciences of the USSR, State Institute of Applied Chemistry

"Some Thermophysical Properties of Isotropic Pyrolytic Graphite"

TO THE PERSON AND THE

Moscow, Teplofizika Vysokikh Temperatur, Vol 11, No 2, Mar/Apr 73, pp 308-313

Abstract: A study is done on the electrical resistance, thermal conductivity and radiative characteristics of pyrolytic graphite which lacks a preferred orientation of the crystallographic planes with respect to the deposition surface. The measurements were made on specimens with densities ranging from 1.76 to 2.19 g/cc over a wide temperature interval. The behavior of the properties as a function of density and temperature is explained in terms of peculiarities of the defect structure of isotropic pyrographite.

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USSR

UDC 621.317.331:536.45

PETROV, V. A., PETROVA, I. I., CHEKHOVSKOY, V. Ya., LYUKSHIN, Ye. N.

"Specific Electric Resistivity of Pyrographite"

Moscow, Teplofizika Vysokikh Temperatur, Vol. 9, No. 2, Mar-Apr, 71, p. 302-305.

Abstract: Results are presented from an experimental determination of the specific electric resistivity of pyrographite. The specific resistivity in the direction parallel to the precipitation surface is determined in the 300-2200°K temperature interval, the resistivity in the direction perpendicular to this surface -- in the other authors.

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- 81: -

USSR

UDC 621.396.69:621.318

PETROVA, I. I., YERMAKOV, B. N.

"On Peculiarities of the Behavior of Co₂Be₃Fe₂₄O₄₁ Over a Broad Temperature Range"

Elektron. tekhnika. Nauchno-tekhn. sb. Ferrit. tekhn. (Electronic Technology. Scientific and Technical Collection. Ferrite Technology), 1970, vyp. 1 (23), pp 86-89 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V441)

Translation: The authors study initial permeability μ_0 as a function of temperature in the interval from -196 to +420°C in grain-oriented specimens of $\text{Co}_2\text{Be}_3\text{Fe}_{24}\text{O}_{41}$. It is shown that the temperature dependence of the energy of crystallographic anisotropy has a decisive effect on the behavior of $\mu_0(t)$ curves. Pronounced temperature hysteresis is observed in specimens which contain a considerable number of bivalent iron cations. Resumé.

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USSR

UDC 621.396.6:621.318

PETROVA, I. I., LIBEROVA, T. V.

"Properties of Ferroxplanes With Various Types of Porcsity"

Elektron. tekhnika. Nauchno-tekhn. sb. Ferrit. tekhn. (Electronic Technology. Scientific and Technical Collection. Ferrite Technology), 1970, vyp. 1 (23), pp 78-85 (from RZh-Radiotekhnika, No 12, Dec 70, Abstract No 12V444)

<u>Translation</u>: The authors investigate the properties of Ferroxplanes having Y- and W-structure with various densities and various types of porosity. It is shown that the loss tangent increases abruptly in all ferrites beginning with a certain density. A comparison of the properties of solid solutions $\text{Co}_2\text{Y-Mg}_2\text{Y}$ and $\text{Co}_2\text{Y-Zn}_2\text{Y}$ revealed a number of advantages of the latter from the standpoint of use at high frequencies. Resumé.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

USSR UDC 536.2

CHEKHOVSKOY, V. Ya., PETROV, V. A., PETROVA, I. I., and LYUKSHIN, E. N.

"Heat Conductivity of Pyrographite at High Temperatures"

Moscow, Teplofizika Vysokih Temperatur, Akademiya Nauk SSSR, Vol 9, No 1, Jan-Feb 1971, pp 80-81

Abstract: The specimens of pyrographite used to determine its heat conductivity were of tubular form, they were obtained by precipitation from methane at 2100°C temperature. The outside diameter of the tubes was 12 millimeter, wall thickness 1 and 2 millimeter. The specimen was heated by electric current passing through it, the heat generated was determined by measuring the current and the voltage drop.

The coefficient of heat conductivity in the radial direction was determined in the range of 1200 to 2500°K.

The results are compared with those obtained by other authors. The discrepancies are quite high. This is apparently due to differences in micro and macro structure of pyrographite, which depends on precipitation temperature, heat treatment, specimen geometry and other factors. The discrepancies 1/2

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USSR

CHEKHOVSKOY, V. Ya., et al., Teplofizika Vysokih Temperatur, Akademiya Nauk SSSR, Vol 9, No 1, Jan-Feb 1971, pp 80-81

are also caused by systematic errors connected with different experimental methods.

The error analysis of the obtained results shows that the maximum relative systematic error in determining the coefficient of heat conductivity is 15 to 16%.

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UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INFLUENCE OF STRONTIUM ON THE MAGNETIC PROPERTIES OF CO SUB2 BA
SUB3 FE SUB24 O SUB41, CO SUB2 SR SUB3 FE SUB24 O SUB41 SOLIO SOLUTIONS
AUTHOR—PETROVA, 1.1.

COUNTRY OF INFO--USSR

SOURCE-FIZ. TVERD. TELA 1970, 12(5), 1447-9

DATE PUBLISHED----70

SUBJECT AREAS -- PHYSICS, CHEMISTRY

TOPIC TAGS--SOLID SOLUTION, STRONTIUM, MAGNETIC PROPERTY, COBALT COMPOUND, BARIUM COMPOUND, STRONTIUM COMPOUND, IRON DXIDE, THERMAL EFFECT, MAGNETIC STRUCTURE

CONTROL MARKING--NO RESTRICTIONS

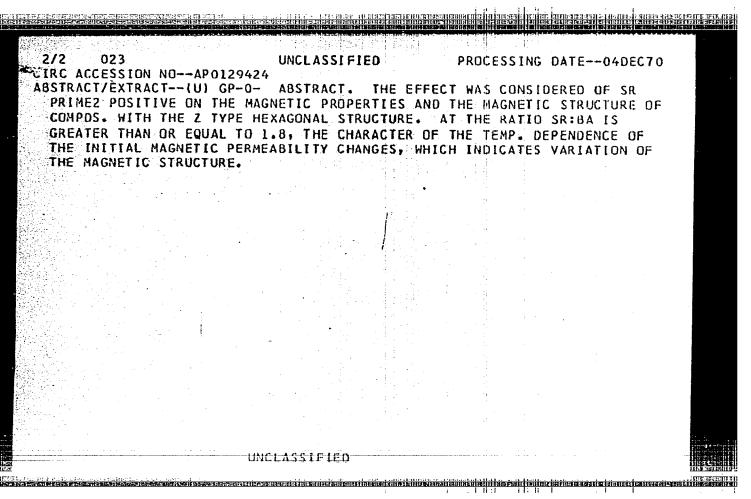
DOGUMENT CLASS--UNCLASSIFIED PROXY REEL/FRAME--3003/0168

STEP NO--UR/0181/70/012/005/1447/1449

CIRC ACCESSION NO--APO129424

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"



USSR

VDC 542.65:546.791.6'171.5

VYKHOVSKIY, D. N., and PETROVA, I. K.

"A New Compound of Uranyl Oxalate with Hydrazine"

Leningrad, Radiokhimiya, Vol XIII, No 3, 1971, pp 470-472

Abstract: Uranyl oxalate in reaction with hydrazine forms a crystalline precipitate upon decantation of the aqueous solutions, containing uranyl oxalate ions and some hydrazine salt. Several preparations of this salt were made with addition of hydrazine and HCl to a solution of uranyl oxalate in ammonium oxalate, or by decantation of aqueous solutions of uranyl chloride and hydrazine with a solution of oxalic acid, the precipitates being washed in a little water, alcohol and ether, and then air-dried. Despite variation in contents of the initial solutions, gravimetric and titration methods indicated a practically invariable formula — N2H5H $(UO_2)_2(C_2O_4)_3$ 4 H2O — for the new compound. Additional data on the weight composition and chemical reactions of this compound are included in the paper.

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13 =

Organophosphorous Compounds

USSR

UDC 546.183

PETROVA, I. M., ZYK, N. V., NIFANT'YEV, E. YE.

"Hydrolysis and Acidolysis of Methriol Phosphite"

Vestnik Moskovskogo Universiteta, Khimiya, No 4, 1971, pp 433-435

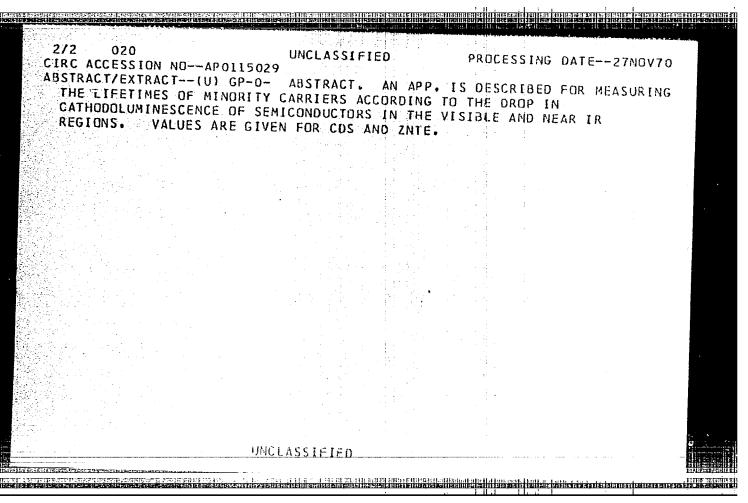
Abstract: Earlier works have noted the great hydrolytic instability of methriol /I,1,1-tris(hydroxymethyl)ethane/ phosphite
and concluded that it is hydrolyzed by even traces of moisture
to the monocyclic acid phosphite. The authors established that
the hydrolysis does not occur so simply. Studying the interaction
of methriol phosphite with acids when heated to 80° for several
hours, the authors determined that the reactivity of methriol
phosphite is lower than that of non-cyclic normal phosphite.
2-Methyl-2-benzoyloxymethyl-1,3-propylene phosphite was produced
by reesterifying methriol monobenzoate with dimethyl phosphite.
Gertain properties of this substance were studied, including reactions producing polyphosphites.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

UNCLASSIFIED PROCESSING DATE -- 27NOV707 1/2 TITLE--APPARATUS FOR MEASURING THE LIFETIMES OF MINORITY CARRIERS IN ESEMICONDUCTORS -U-AUTHOR-(05)-VLASOV, A.N., KABANOV, A.N., KURBATOV, L.N., PETROVA, I.YU., SOROKONOVITSKIY, N.V. COUNTRY OF INFO--USSR SOURCE--PRIB. TEKH. EKSP. 1970, 1, 222-3 DATE PUBLISHED ---- 70 SUBJECT AREAS--PHYSICS TOPIC TAGS--CADMIUM SULFIDE, ZINC TELLURIDE, MINORITY CARRIER, SEMICONDUCTOR MATERIAL CONTROL MARKING--NO RESTRICTIONS DOCUMENT CLASS--UNCLASSIFIED STEP NO--UR/0120/70/001/000/0222/0223 PROXY REEL/FRAME--1994/1008 CIRC ACCESSION NO--APOLISO29 UNCLASSIFIED

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"



USSR

UDC: 539.4:624.012

BRYZHATYY, E. P., PETROVA, K. V.

"Effect of Inelastic Deformation on Crack Formation in Concrete Elements Which are Eccentrically Compressed With Low Eccentricities"

V sb. Dlitel'n. deformativn. protsessy v beton. i zhelezobeton. konstruktsiyakh (Long-Term Deformation Processes in Concrete and Reinforced Concrete Structures—collection of works), Moscow, Stroyizdat, 1970, pp 92-100 (from RZh-Mekhanika, No 4, Apr 71, Abstract No 4V831)

Translation: The paper presents the results of a study of crack formation in concrete elements with low eccentricities. It is shown that the calculation for crack formation recommended by existing norms gives an overstatement of the actual crack resistance in many instances, and gives no indication of the boundary where it is necessary to begin taking the appearance of cracks into consideration. It is recommended that calculation for crack formation be done on eccentrically compressed elements beginning at the boundary defined by the condition $e_0/h \geqslant 0.13$, and that inelastic at lower stresses than the bending compression strength of the concrete. Authors' abstract.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

TISSR

AGEYEV, N. V., Academician, PETROVA, L. A., GRANKOVA, L. P., MARKOV, A. M., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences of the USSR, Moscow

"A Titanium-Based Composite Material"

Moscow, Doklady Akademii Nauk SSSR, Vol 210, No 4, 1 Jun 73, pp 811-814

Abstract: The paper describes a composite laminar material based on titanium made by hot-rolling in a vacuum. Five-layer and three-layer composites are studied to determine the force and temperature parameters and the feasibility of making a strong joint between layers. The plastic component for the five-layered composite was VTl α -titanium foil 0.1 mm thick. It was assumed that a sheet built up from n layers of such foil would have greater resistance to brittle fracture than a monolithic sheet of titanium of the same thickness. The foil was etched in dilute hydrofluoric acid and washed in hot water with hydrogen peroxide added before rolling the sheet. A sheet 0.6 mm thick was then rolled from nine layers of foil, and two such sheets were rolled together to make a sheet about 1 mm thick, which was used in the composite. The strength material for

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AGEYEV, N. V. et al., Doklady Akademii Nauk SSSR, Vol 210, No 4, 1 Jun 73, pp 811-814

the composite was IVT1 alloy (Ti-7Mo-5.5Cr-3Fe-3Al) in 0.65 mm cold-rolled sheets. The two outside plates and the central plate were IVT1 alloy with alternating layers of titanium foil. After assembly of the stack, the edges were welded and rolling was done to 35% reduction at 1100°C. The resultant 2.7 mm plate was then cold-rolled to 2.3 mm. The plate was cut in the direction of rolling into specimens which were heat treated and studied for structure, microhardness of the layers and diffusion redistribution of the alloying elements between layers. The three-layer sandwich plates were made with a-titanium in the outer layers and an alloy similar to IVT1 in the center. The results of tests show that specimens made up of n layers of the same muterial are stronger than a monolithic plate of the same thickness. Greater strength can also be achieved by increasing the number of layers in a composite material.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

USSR

UDC 669.295.5:539.376

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AGEYEV, N. V., PETROVA L. A., GREKOV, N. A., GRANKOVA, L. P., KOZLOVSKAYA, T. M., and ARKOVENKO, G. I., Moscow

"Creep of IVT-1, a B-Alloy of Titanium"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 163-167

Abstract: The creep of IVT-1, a β-alloy of titanium (7% Mo, 5.5% Cr, 3% Fe, 3% Al, remainder Ti) was determined at temperatures of 100, 200, 250, and 350°C at stresses of 120, 115, 110, 90, 80 and 75 kg/mm² over 1,000 hours and in some cases up to 2,500 hours. The limiting stress causing 0.02% residual deformation of the alley after 1,000 hours is 105 kg/mm² at 200°C and 79 kg/mm² at 250°C. The rate of stable creep at these stresses and temperatures is 2·10⁻⁵%/hr. The creep tests showed that if two specimens tested under identical conditions show different initial deformation, the specimen with greater initial deformation generally has lower creep than the specimen with less initial deformation. Total deformation increases little with increasing load time at 100-250°C and 120-75 kg/mm². Following creep tests, some breakup of β phase grains is observed; migration of grain boundaries and displacement along grain axes (slipping) were noted.

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UDC: 539.385

AGEYEV, N.V., PETROVA, L.A., TERENT'YEV, V.F., GRANKOVA, L.P. and KOZLOVSKAYA, T.M., Institute of Metallurgy imeni A. A. Baykov, Academy of Sciences USSR

"Effect of Structure on the Cyclic Strength of IVT1 Titanium Beta-Alloy"

Moscow, Sb. "Ustalost' metallov i splavov". "Nauka" Press, 1971, pp 70-73

Translation: The cyclic strength of IVTl titanium alloy (6.7% Mo, 4.99% Cr, 2.8% Fe, 3.1% Al) has been investigated under alternating loads following heat treatments under various conditions. The structure of the alloy was examined as a function of these conditions under both light and electron microscopes. The highest fatigue limit of 5.3 kg/mm² was exhibited by an alloy heat treated under the following specifications: hardening at 800C for 1 hr., water quenching, aging for 15 hrs. at 550C, and cooling in open air. The alloy treated under these conditions is characterized by homogeneous decay of the \$\beta\$-solid solution. (3 illustrations, 6 bibliographic references; summary).

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

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USSR

UDC 669.295.5:539.376

AGEYEV, N. V., PETROVA, L. A., GREKOV, N. A., GRANKOVA, L. P., KOZLOVSKAYA, T. M., and ARKOVENKO, G. I., MOSCOW

"Creep of IVT-1, a \beta-Alloy of Titanium"

Moscow, IAN SSSR, Metally, No 2, Mar-Apr 71, pp 163-167

Abstract: The creep of IVT-1, a \$\beta\$-alloy of titanium (7% Mo, \$5.5% Cr, 3% Fe, 3% Al, remainder Ti) was determined at temperatures of 100, 200, 250, and 350°C at stresses of 120, 115, 110, 90, 80, and 75 kg/mm² over 1,000 hours and in some cases up to 2,500 hours. The limiting stress causing 0.02% residual deformation of the alloy after 1,000 hours is 105 kg/mm² at 200°C and 79 kg/mm² at 250°C. The rate of stable creep at these stresses and temperatures is 2·10-5%/hr. The creep tests showed that if two specimens tested under identical conditions show different initial deformation, the specimen with greater initial deformation generally has lower creep than the specimen with less initial deformation. Total deformation increases little with increasing load time at 100-250°C and 120-75 kg/mm². Following creep tests, some breakup of \$\beta\$ phase grains is observed; migration of grain boundaries and displacement along grain axes (slipping) were noted.

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- 72 -

USSR

UDC 669.295:620.186.5

PETROVA, L. A., BABAREKO, A. A., GRANKOVA, L. P., KOZLOVSKAYA, T. M., and SAZONOVA, T. N., Institute of Metallurgy imeni A. A. Baykov

"Recrystallization of β -Alloy of IVT-1 Titanium"

Moscow, Metallovedeniye i Termicheskaya Obrabotka Metallov, No 11, 1972, pp 30-34

Abstract: The ionization method of taking texturograms was used for plotting polar figures. The changing character in annealing of polar figures describes the process of recrystallization. Specimens were cut from a bar forged by broaching in two perpendicular directions at 950°C. The specimens were annealed in air at 400-1200°C with 30 min aging at each temperature. The textures of specimens of different grain size and boundary character in continuous heating up to 700°C are discussed by reference to microstructures and polar figures. Specimens annealed at 600°C showed a considerably changed texture in comparison with the initial texture. This is connected with the beginning recrystallization, which is practically completed at 650°C. Extrusion or forging by a more complex method is recommended for obtaining Two figures, one bibliographic reference.

APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

USSR

UDC: 621.375.4(088.8)

KATIKOV, V. M., KUSHPIL', V. I., PETROVA, L. F.

"A Device for Amplification of Electric Signals"

USSR Author's Certificate No 265957, filed 8 Dec 68, published 7 Jul 70 (from RZh-Radiotekhnika, No 1, Jan 71, Abstract No 1D76 P)

Translation: This Author's Certificate introduces a device for amplification of electric signals which vary over a wide range of input values. The device consists of series-connected amplification and control stages. To ensure normal operation of the device in the case of small signal-to-noise ratios (less than unity), the regulating circuit for the control stages is connected to the following amplification stage of the device through a synchronous detector with filter.

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APPROVED FOR RELEASE: 09/17/2001 CIA-RDP86-00513R002202420004-5"

Computers: Applications & Programming

USSR

LINKIN, G. A., PETROYA, L. I., and TATARENKO, V. N. UDC: 681.3.06:51

"Methods of Analytic Description of Discretely Specified Plane Outlines of Complex-Shaped Parts"

Kiev, V sb. Chislovoye programmnoye upr. tekhnol. oborud. (Numerical Programmed Control of Technological Tools-collection of works)
"Tykhnika," 1973, pp 8-13 (from RZh-Avtomatika, telemekhanika i Vychislitel naya tekhnika, No 12, 1973, Abstract No 12B167)

Translation: A classification is considered for the most widely used methods of solving problems in the analytic description of discretely specified outlines which is general for geometric interpretations and degree of accuracy in satisfying conditions at specified points. The methods and procedures for solving problems of discretely specified contours involve the replacement of the contours by analytic curves determined by the form of the connection between the substituted curve and the discrete points, with possible additional conditions depending on the geometrical interpretations of the problem's solution. Three illustrations, bibliography of 10. Resume.

USSR

UDC 541.183

DUBININ, M. M., NIKOLAYEV, K. M., POLYAKOV, N. S., and PETROVA, L. I., Institute of Physical Chemistry, Academy of Sciences USSR

"Study of Adsorption Dynamics in a Wide Range of Penetration Concentrations. 2. Examination of the General Picture of the Adsorption Dynamics Process"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 6, Jun 72, pp

Abstract: The article examines the general picture of the dynamics of benzene vapor adsorption in a wide range of penetration concentrations (from 10-5 mg/l to initial concentration) and with varying adsorbent layer lengths (from one grain to 16 cm). It was found that the adsorption process taking place in a layer can be conditionally divided into three stages in the movement of the concentration front over the layer. The first (initial) stage is characterized by the practically instantaneous distribution of concentrations over the length of the layer, resulting in the penetration of the vapor a certain layer length. The second (and longer) stage includes the movement of the concentration front over the layer at various velocities which are characteristic of each concentration and which change during the process. This stage is characterized by nonstationarity of the process, which tends in the limit to a stationary regime (i.e., the third stage). 3

1/2 027 TITLE--LUBRICATING COATING -U-

UNCLASSIFIED

PROCESSING DATE-300CT70

AUTHOR-(05)-SENTYURIKHINA, L.N., RUBTSOVA, Z.S., PETROVA, L.N., LUTSENKO,

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DATE PUBLISHED-C9MAR70

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CONTROL MARKING-NO RESTRICTIONS

DOCUMENT CLASS-UNCLASSIFIED PROXY REEL/FRAME--3003/1798

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CIRC ACCESSION NOAA0130631		PROCES	SING DATE-	-30UCT70
ABSTRACT/EXTRACT—(U) GP-0- CONTAINS 60-75 WT. PERCENT POLYMETHYLPHENYLSILOXANE RE SIO) (PHSIO SUB1.5) (PH SUB2	ABSTRACT. A LONG I MO DISULFIDE AND 25 ESIN WITH A UNIT STE SIOJ SUBO 351	ASTEMA .	1100 -	COATING
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USSR

UDC 542.91:547.1:118

ARBUZOV, A. Ye. (deceased), VALITOVA, F. G., GAZETDINOVA, N. G., and PETROVA, L. P., Institute of Organic and Physical Chemistry imeni A. Ye. Arbuzov, Academy of Sciences USSR, Kazan!

"Alpha-Phenyl-beta-diethyl(diphenyl)phosphonodydrazines"

Moscow, Izvestiya Akademii Nauk SSSR, Seriya Khimicheskaya, No 7, Jul 73, pp 1646-1648

Abstract: Upon the reaction in dry benzene of the chlorides of diethyl and diphenyl phosphate with unsymmetric sodium phenylhydraphen, alpha-phenyl-beta-diethylphosphonohydrazine (I) and alpha-phenyl-beta-diphenylphosphonohydrazine (II), respectively, were obtained instead of the expected alpha-phenyl-alpha-diethyl (diphenyl) phosphonohydrazines. The reaction of I and II with phthalic acid dichloride in dry benzene in the presence of Et₃N led to the formation of 2-phenyl-3-diethylphosphono- and 2-phenyl-3-diphenylphosphono-1,4-phthalazinedione, respectively.

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UDC 616.932-092.9

ZYKIN, L. F., LOBANGV, V. N., SAGEYEVA, O. F., and PETROVA L. S., All Union Scientific Research Antiplague Institute "Mikrob"

"Study of the Action of Cholerogen and Isolated Cell Components of V. cholerae"

Moscow, Zhurnal Mikrobiologii, Epidemiologii i Immunologii, No 9, Sep 70, pp 36-43

Abstract: A comparative study of the action of cholerogen and the isolated cell structures of Cholera vibrio (cell walls, flagellae, and cytoplasm) is presented. A fatal cholera syndrome developed in neonatal rabbits following endoenteric infection. Histological investigations revealed various lesions in the intestine, including necrotic changes in the villi, nucosa and submucosa of the small intestine, and granular dystrophy of the kidney and liver cells. No cholerogenic action was produced by the cell walls, flagellae, and cytoplasm. Endotoxin localized in cell walls and cholerogen differed in respect to their effect on neonatal rabbits.

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UNCLASSIFIED PROCESSING DATE--300CT70 TITLE-THE ROLE OF CELLULAR STRUCTURES OF CHOLERA AND NON CHOLERA VIBRIDS IN DEVELOPMENT OF NON SPECIFIC RESISTANCE -U-AUTHOR-(02)-ZYKIN, L.F., PETROVA, L.S. COUNTRY OF INFO-USSR SOURCE--ANTIBIOTIKI, 1970, VOL 15, NR 6, PP 537-540 DATE PUBLISHED----70 SUBJECT AREAS-BIOLOGICAL AND MEDICAL SCIENCES TOPIC TAGS-CHOLERA, VIBRIO COMA, CYTOPLASM, CELL MEMBRANE CONTROL MARKING-NO RESTRICTIONS DOCUMENT CLASS-UNCLASSIFIED PROXY REEL/FRAME--2000/1865 STEP NO--UR/0297/70/015/006/0537/0540 CIRC ACCESSION NO--APO125476

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